

WHAT IS CLAIMED IS:

1. A rotary polygon mirror assembly adapted for use with a rotor assembly for rotation by a rotational magnetic force generated by a stator, the rotary polygon mirror assembly comprising:

a rotary polygon mirror disposed at the rotor assembly and having a plurality of reflecting surfaces respectively provided at outer surfaces thereof; and

a fixing member disposed so as to substantially cover an upper surface of the rotary polygon mirror, for fixing the rotary polygon mirror to the rotor assembly.

2. The rotary polygon mirror assembly of claim 1, wherein the fixing member has a larger outer circumferential portion than the upper surface of the rotary polygon mirror so as to be protruded from the reflecting surface of the rotary polygon mirror.

3. The rotary polygon mirror assembly of claim 2, wherein the rotor assembly comprises a rotational shaft rotatably supported to the stator, a rotor frame disposed at an upper portion of the rotational shaft and having a mounting surface on which the rotary polygon mirror is mounted, and a rotor case disposed at the rotor frame to support a magnet for operating with the stator and generating the rotational magnetic force.

4. The rotary polygon mirror assembly of claim 1, wherein the fixing member is a circular disc spring comprising a coupling hole formed at a center portion thereof, an elastic piece protruded from a circumference of the coupling hole in one direction, and a curved portion protruded in the other direction so as to press the rotary polygon mirror.

5. The rotary polygon mirror assembly of claim 4, wherein an outer circumferential portion of the disc spring is inclined downward from a center portion of the

disc spring to an outside.

6. The rotary polygon mirror assembly of claim 4, wherein the outer circumferential portion of the disc spring is apart from the upper surface of the rotary polygon mirror.

7. A rotary polygon mirror assembly adapted for use with a rotor frame fixed to a rotational shaft and a rotor case fixed to the rotor frame having a magnet for generating a rotational magnetic force with a coil, the rotary polygon mirror assembly comprising:

a rotary polygon mirror disposed at the rotor frame and having a plurality of reflecting surfaces respectively provided at outer surfaces thereof; and

a fixing member disposed so as to substantially cover an upper surface of the rotary polygon mirror and thus prevent air containing dirt from being contacted with the reflecting surface, for fixing the rotary polygon mirror to the rotor frame.

8. The rotary polygon mirror assembly of claim 7, wherein the fixing member has a larger outer circumferential portion than the upper surface of the rotary polygon mirror so as to be protruded from the reflecting surface of the rotary polygon mirror.

9. The rotary polygon mirror assembly of claim 7, wherein the fixing member is a circular disc spring comprising a coupling hole formed at a center portion thereof, an elastic piece protruded from a circumference of the coupling hole in one direction, and a curved portion protruded in the other direction so as to press the rotary polygon mirror.

10. The rotary polygon mirror assembly of claim 9, wherein an outer circumferential portion of the disc spring is inclined downward from a center portion of the disc spring to an outside.

11. The rotary polygon mirror assembly of claim 9, wherein the outer circumferential portion of the disc spring is apart from the upper surface of the rotary polygon mirror.

12. The rotary polygon mirror assembly of claim 7, further comprising a printed circuit board.

13. The rotary polygon mirror assembly of claim 12, further comprising a sleeve fastened to the printed circuit board and the rotational shaft rotatably supported to the sleeve.

14. The rotary polygon mirror assembly of claim 13, wherein said coil is wound on a core fixed to an outer surface of the sleeve.

15. A method of assembling a rotary polygon mirror assembly having a plurality of reflecting surfaces respectfully provided at outer surfaces thereof, and having a stator and a rotor assembly rotated by a rotational magnetic force generated by the stator, comprising the step of:

attaching the rotary polygon mirror to the rotor assembly with a fixing member adapted to substantially cover an upper surface of the rotary polygon mirror.

16. The method of claim 15, further comprising the step of:
forming said fixing member as a circular disc spring comprising a coupling hole formed at a center portion thereof, an elastic piece protruding from a circumference of the coupling hole in one direction, and a curved portion protruding in the other direction so as to press the rotary polygon mirror.

17. The method of claim 16, wherein the forming step further comprises forming the circular disc spring such that an outer circumferential portion of the disc spring is inclined downward from a center portion of the disc spring to an outside.

18. The method of claim 16, wherein the forming step further comprises forming the circular disc spring such that an outer circumferential portion of the disc spring is apart from an upper surface of the rotary polygon mirror when the rotary polygon mirror is attached to the rotor assembly.